

Reply Under 37 C.F.R. § 1.116 – Expedited Procedure
Serial No. 10/698,055
Examiner Jianye Wu

Amendment to the Claims

1 (Currently Amended). A method for transmitting wireless communication signals, comprising:

forming MAC layer signals according to a DOCSIS protocol;

adding, at the MAC layer, an ARQ header having a sequence number to each of the MAC layer signals;

transmitting a first group of the MAC layer signals within packet data units (PDUs) from a wireless radio transceiver;

storing the transmitted MAC layer signals in a transmitter window formed in memory; after receiving a first negative-acknowledge signal;

if a specified period has elapsed since receiving [[a]] the first negative-acknowledge signal, requesting an explicit acknowledgment from the receiver or deleting a first group of stored MAC layer signals stored within the transmission window;

receiving the a second negative-acknowledge that identifies a missing PDUpacket data unit (PDU); and

deleting a second group of packet data units transmitted MAC layer signals stored within the transmission window that were transmitted prior to the identified missing PDU in the [[the]] negative-acknowledge;

buffering out of sequence MAC layer signals until in sequence delivery occurs; and

deleting stored MAC layer signals if the sequence number identified in the first or second acknowledge signal does not correspond to a sequence number of the PDUs for [[a]] the stored MAC layer signals.

2 (Canceled).

3 (Currently Amended). The method of claim 2 further including storing transmitted PDUs frames until [[a]] the second negative acknowledge signal is received.

Reply Under 37 C.F.R. § 1.116 – Expedited Procedure

Serial No. 10/698,055

Examiner Jianye Wu

4 (Currently Amended). The method of claim 2 further including receiving the second negative acknowledge a non-acknowledge signal from a receiver, the second negative acknowledge a non-acknowledge signal including a previously transmitted sequence number.

5 (Currently Amended). The method of claim 4 further including deleting a group of stored MAC layer signals, the group of stored MAC layer signals being a function of a value of based the previously transmitted sequence number.

6 (Currently Amended). The method of claim 5 wherein at least one of the first group, the second group, or a third the group comprises all the MAC layer signals transmitted prior to the MAC layer signal PDU containing the previously transmitted sequence number.

7. Canceled.

8 (Currently Amended). The method of claim 4 further including retrieving a stored MAC layer signal that corresponds with the previously transmitted sequence number received in the second negative acknowledge signal.

9 (Currently Amended). The method of claim 8 further including transmitting the stored MAC layer signal that corresponds with the previously transmitted sequence number received in the second negative acknowledge signal.

10 (Currently Amended). The method of claim 9 further comprising deleting (flushing) all stored MAC layer signals that were transmitted prior to the stored MAC layer signal that corresponds with the previously transmitted sequence number received in the second negative acknowledge signal.

11 (Currently Amended). The method of claim 4 further including determining whether the previously transmitted sequence number identified in the second negative acknowledge signal corresponds to a sequence number for [[a]] one of the stored MAC layer signals.

12. Canceled.

13 (Currently Amended). A wireless transceiver for transmitting and receiving wireless communication signals, comprising:

a receiver portion that receives negative-acknowledge signals transmitted by another a remote device over a wireless medium; and

a transmitter portion, wherein the transmitter portion wireless transceiver:

forms MAC layer signals according to a DOCSIS protocol;

adds, at the MAC layer, an ARQ header containing a sequence number to each of the MAC layer signals;

transmits the MAC layer signals;

stores the MAC layer signals in a first buffer of a memory;

after receives a first negative-acknowledge signal and if a specified period has elapsed since receiving [[a]] the first negative-acknowledge signal or since the MAC layer signals were transmitted without receiving the first negative-acknowledge signal, requests an explicit acknowledgment from the receiver remote device or deletes a group of stored MAC layer signals;

receives the a second negative-acknowledge that identifies a missing packet data unit (PDU) and deletes a group of packet data units transmitted prior the identified missing PDU;

stores out of sequence MAC layer signals in a second buffer;

deletes stored MAC layer signals if the sequence number identified in the negative-acknowledge signal does not correspond to a sequence number for a stored MAC layer signal;

maintains three timers to track a maximum time a transmitter has to store a packet for retransmission, a flush time and a time a receiver must allow between each negative-acknowledge signal N-ACK; and

maintains two counters to track a maximum number of retries for transmitting a packet and to track a maximum number of retries for the explicit acknowledge message.

14 (Currently Amended). The wireless transceiver of claim 13 wherein the wireless transceiver stores MAC layer signals in the first buffer ~~transmitted frames~~ until [[a]] the first or second negative-acknowledge signals [[is]] are received.

15 (Currently Amended). The wireless transceiver of claim 13 wherein the wireless transceiver receives and responds to [[an]] the first or second negative-acknowledge signal from a receiver, the negative-acknowledge signal including a previously transmitted sequence number.

16 (Original). The wireless transceiver of claim 15 wherein the wireless transceiver deletes a group of stored MAC layer signals, the group of stored MAC layer signals being a function of a value of the previously transmitted sequence number.

17 (Original). The wireless transceiver of claim 16 wherein the group comprises all MAC layer signals transmitted prior to the MAC layer signal containing the previously transmitted sequence number.

18. Canceled.

19 (Original). The wireless transceiver of claim 16 wherein the wireless transceiver retrieves a stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

20 (Original). The wireless transceiver of claim 19 wherein the wireless transceiver transmits the stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

21 (Original). The wireless transceiver of claim 20 wherein the wireless transceiver deletes all stored MAC layer signals that were transmitted prior to the stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

22 (Currently Amended). The wireless transceiver of claim 16 wherein the wireless transceiver determines whether the previously transmitted sequence number identified in the acknowledge signal [[is]] corresponds to a sequence number for a stored MAC layer signal.

23. Canceled.

24 (Currently Amended). A fixed wireless device, comprising:
means for communicating over a wireless physical layer;
means for communicating over a DOCSIS MAC layer;
means for embedding an ARQ protocol in said DOCSIS MAC layer;
means for storing transmitted packet data units;
means for receiving a negative-acknowledge and for deleting a group of packet data units transmitted prior to a packet data unit identified in the negative-acknowledge;
means for storing out of sequence packet data units;

means for deleting a group of stored MAC layer signals after a specified period has elapsed since receiving [[a]] the negative-acknowledge signal bascd upon a missing packet data unit sequence number that is received with the negative-acknowledge signal;

means for receiving the negative-acknowledge and deleting a group of packet data units transmitted prior to a packet data unit identified in the negative acknowledgement;

means for maintaining three timers to track a maximum time a transmitter has to store a packet for retransmission, a flush time and a time a receiver must allow between each negative-acknowledge signal N-ACK; and

means for maintaining two counters to track a maximum number of retries for transmitting a packet and to track a maximum number of retries for the explicit acknowledge message.[[.]

25 (Currently Amended). The fixed wireless device of claim 24 wherein the means for communicating includes a receiver portion that receives non-acknowledge signals transmitted by another device over a wireless medium and a transmitter portion, wherein the transmitter portion:

forms MAC layer signals according to a DOCSIS protocol;

adds, at the MAC layer, an ARQ header containing a sequence number to each of the MAC layer signals;

transmits the MAC layer signals;

stores the MAC layer signals; and

deletes at least one stored MAC layer signal after receiving the negative-acknowledge.

26 (Currently Amended). The fixed wireless device of claim 25 wherein the fixed wireless device stores transmitted frames until either [[a]] the non-acknowledge signal is received or a timer expires.